

followed by skin necrosis) reported by Penswick and Wright, we suggest that the patient had cholesterol crystal embolisation. The diagnosis could be confirmed by histological findings of cholesterol crystals in the small and medium sized arteries. It may be necessary to take repeated biopsy specimens to find these changes.

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Future of cancer registries

EDITOR,—Allyson Pollock's editorial on the problems that cancer registries face in obtaining good quality data on outcomes points out the potential conflict between datasets based on populations and those based on clinicians.¹ Clinically based datasets focus on patients treated in a given centre and do not provide an accurate picture of the treatment received by the population as a whole. On the other hand, data normally collected by cancer registries cover all cases of cancer but typically include inadequate amounts of the clinical information necessary for valid comparisons of outcomes of treatment.^{2,3} The merits of the two sources of data thus need to be combined for a clearer picture of variations in both the delivery and outcome of treatment.

West Midlands Regional Health Authority has just approved substantial funding for a joint programme covering the cancer registry and the proposed cancer centres and units as part of the implementation of the Calman report on cancer services. The system will be based on existing data collection networks in the cancer registry and cancer centres. To improve trial recruitment and monitoring, links will be established between the Cancer Research Campaign's Trials Unit and the cancer registry. Data collected will as far as possible be derived from clinicians by means of computer database systems as part of routine work practices.^{4,5} They will be coded at source, through the use of look-up tables, according to the International Classification of Diseases systems used at the cancer registry. Data on radiotherapy and chemotherapy prescribed will be collected directly by means of computer based prescribing systems.

Data on patients treated by clinicians in cancer units not covered by the core computer network will be collected by means of machine readable registration and follow up forms as part of the clinical record. Ideally the data will be transferred to local computerised databases and then downloaded to the cancer registry. Completion of these forms will be a criterion within the region for obtaining and keeping the status of a cancer unit. Clinical information collected will be available to the unit, together with data gathered by the registry from other sources for audit or research purposes.

We believe that the system we are setting up will use the resources at the cancer registry to maximum advantage while at the same time being of value to clinicians auditing their local practice.

The system should provide regionwide data on outcomes based on information derived from clinicians.

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Hepatitis B immunisation and reactive arthritis

EDITOR,—Wajahat Hassan and Roger Oldham describe two patients in whom immunisation against hepatitis B was followed by prolonged reactive arthritis.¹ Sexually acquired reactive arthritis is an important form of reactive arthritis; gonococcal infection may also present with arthritis. No details of the sexual histories of the patients are reported, and although the patient in case 1 had symptoms of dysuria, a urethral swab was not taken. There is no report of diagnostic tests for chlamydia, the commonest organism associated with sexually acquired reactive arthritis. Conventional urine cultures will not grow this organism.

Failure to exclude a sexually acquired reactive arthritis casts doubt on the authors' suggestion of an association between vaccination and arthritis. Both patients were health care workers, which might have caused problems for their colleagues in investigating for a sexually transmitted disease. Referral to a genitourinary medicine clinic, because of its confidentiality, should avoid such problems. If the patients' arthritis was related to a sexually transmitted disease the outcome might have been better with appropriate treatment of the infecting organism. This is another reason for referring all such patients to a genitourinary medicine clinic.

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Implicit memory

EDITOR,—Recent work by Hughes *et al* suggests that unconscious processing of auditory information takes place during general anaesthesia,¹ which would fit into the category of "implicit memory" as defined in J G Jones's editorial.² This raises the question whether implicit memory is an unavoidable and consistent property of general anaesthesia.

Studies have shown that electroencephalographic patterns during hypnosis and conscious sedation with inhalation agents are characterised

by an increase in α (9-12 Hz) activity and suppression of low (0-3 Hz) frequencies.^{3,4} We have monitored the electroencephalogram during the complete cycle of induction of anaesthesia, surgery, and recovery, using a transform that eliminates the errors of the fast Fourier spectral analysis method. The characteristic pattern in a patient who is adequately anaesthetised, as judged by accepted methods, is that of complete suppression of the α activity but with a dominant low frequency component in the 1-3 Hz range. We believe that reappearance of α activity may be an important indicator of lightening anaesthesia and that it is this that is associated with the onset of implicit memory. Investigations that showed success of unconscious implicit learning may possibly have been carried out⁵ during periods when subjects were only lightly anaesthetised.

We believe that sufficient information on depth of anaesthesia can be derived from the intrinsic electroencephalogram without resort to auditory or visual evoked potentials. Avoidance of such methods has considerable advantages in ear or eye surgery and for patients with impaired hearing or vision. Our transform is being assessed to determine its usefulness in detecting periods of either implicit or explicit awareness during operations.

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Cochrane Collaboration

EDITOR,—I wish to clear up three misconceptions about the Cochrane Collaboration's work which are mentioned in Fiona Godlee's editorial.¹

Firstly, the claim that the Cochrane Collaboration limits itself to randomised controlled trials is not true. Because so many ineffective and harmful treatments have been introduced on the basis of unreliable observational evidence we will continue to concentrate on randomised controlled trials as the first step in assessing the effects of health care. However, because we select topics for study on the basis of their importance to health, not because they have been subjected to randomised controlled trials, we use non-randomised studies when no randomised ones can be carried out to address the topic.

Secondly, the criticism that the collaboration doesn't wish to expose its processes and products to detailed external scrutiny is contradicted by both deeds and words. Anybody, anywhere, can join the collaboration, and we are delighted that so many of the participants at the second colloquium, most of whom were not members at the collaboration's start, have subsequently joined us. Furthermore, the electronic publication of Cochrane reviews (first as protocols, subsequently as analyses) will provide unprecedented opportunities not only for peer review (which, of course, will also be carried out by the print journals publishing derivations of them) but for continuous updating and rapid modification in the light of criticism.² Finally, the peer review process is the focus of one of our newest Cochrane centres.

Thirdly, those who claim that too little emphasis is placed on disseminating the results of Cochrane

reviews are simply uninformed, for there are none to disseminate. It takes up to five years to prepare a valid, clinically useful systematic review, and we are barely one year old. Even when our reviews start coming out next year their number will be small because they have to meet the high standards our members have created. None the less, the prospects for their wide dissemination look good. The current use of their forerunner (the pilot *Cochrane Pregnancy and Childbirth Database*) is dramatically greater than that of its predecessor (*The Oxford Database of Perinatal Trials*),³ and our arrangements with journals such as the *BMJ*, the *Lancet*, and *Annals of Internal Medicine* to avoid restrictive copyright, plus our development of versions of Cochrane reviews on the internet, will lead to unprecedented availability of the reviews.

We feel anything but complacent and welcome suggestions from supporters and informed critics alike about how we can do better.

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Transmission of tuberculosis by patients with HIV infection

EDITOR,—R J Kent and colleagues used restriction fragment length polymorphism analysis to show that three strains of *Mycobacterium tuberculosis* from patients positive for HIV at this hospital were indistinguishable.¹ The results became available to us only one year later. Our investigation could not identify a plausible route of transmission.

Case 1—The index patient (a 25 year old South American man) was on a ward remote from the AIDS unit between 15 and 25 June. He had fever, a dry cough, weight loss, and shadowing of the right middle lobe but with neutropenia and lymphopenia and antibodies to HIV. He was transferred on 25 June to a side room on AIDS ward A and walked through AIDS ward B to have a bronchoscopy on 26 June, returning on a trolley. Acid fast bacilli were seen in the bronchoalveolar lavage fluid, so treatment was started and he was isolated as a potential source of infection for at least two weeks; he was discharged on 12 August.

Case 2—The second patient (a 29 year old African woman), who had cytomegalovirus retinitis, was on AIDS ward B (separated from ward A by a corridor) from 24 June to 21 July and from 23 August to 11 October. Cultures of induced sputum (obtained on 26 August), bronchoalveolar lavage fluid (2 September), blood (6 September), and pleural fluid (10 September) yielded *M tuberculosis*.

Case 3—The third patient (a 54 year old English man), who also had cytomegalovirus retinitis, was on AIDS ward B transiently on 3, 26, and 29 June and then from 18 to 29 July and from 14 to 19 August, when he died. *M tuberculosis* was isolated from blood and faeces obtained on 17 August.

If this was an outbreak these events imply that the patients in cases 2 and 3 caught tuberculosis from the patient in case 1. So far as can be established, however, apart from walking through ward B on 26 June (which is unlikely to have led to transmission), the patient in case 1 was isolated on a different ward. The patients were unaware of each other and could not have caught tuberculosis from, say, a common staff source because the patient in case 1 was admitted with active tuber-

culosis and AIDS was diagnosed later. Staff are not shared between the two AIDS wards. Bronchoalveolar lavage was performed with different instruments many weeks apart by different endoscopists. The patients in cases 2 and 3 did not enter the endoscopy room on 26 June, and this room has negative pressure ventilation.

The epidemiology does not support the molecular biology findings and leaves us with worrying uncertainty about how best to manage patients with tuberculosis on AIDS wards. More rapid diagnosis would help, but patients infected with HIV may contract infection from people living in the same room in whom sputum smears yield negative results but sputum cultures yield positive results.² Currently we isolate patients with changes evident on chest radiography and those in whom sputum smears or sputum cultures yield positive results. None of our side rooms have negative pressure ventilation. The suggestion of unexpectedly high transmissibility of tuberculosis in patients with AIDS suggests that even more strict protocols should be adopted, including the isolation of all patients with undiagnosed respiratory disease in AIDS in negatively ventilated side rooms. The emergence of drug resistant tuberculosis would make this even more important.

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Chronic fatigue syndrome and fibromyalgia

EDITOR,—The relation between muscle pain, tender points, the chronic fatigue syndrome, and fibromyalgia are complex, and simplistic answers are inappropriate. In their paper Peter Croft and colleagues extrapolate their results to make two statements that I believe to be incorrect.¹

My conclusions are based on 100 consecutive patients seen at Raigmore Hospital NHS Trust, who fulfilled precise definitions of the chronic fatigue syndrome² or fibromyalgia.³ The importance of this definition of the syndrome is that it has the same three month cut off for length of illness as fibromyalgia.³ Of the 100 patients, 99 (74 women, 25 men) had the chronic fatigue syndrome and one (a woman) had fibromyalgia. Of the patients with the chronic fatigue syndrome, 63 had muscle pain and 28 had tender points on examination, 23 had both, and five had no muscle pain but tender points. These results do not support the authors' statement that the reason why fibromyalgia is not more common in Britain has been the acceptability of the chronic fatigue syndrome as an alternative diagnosis.

The authors also say that it is "inappropriate to define an entity as fibromyalgia." As a clinical virologist, I strongly disagree with this as the distribution and number of tender points in fibromyalgia are different from those in the chronic fatigue syndrome, and the management of the two conditions is different.⁴ Patients with the syndrome should be advised not to increase their activities gradually until they feel 80% of normal,⁵ whereas patients with fibromyalgia may benefit from a regimen of increasing activity.⁴

Muscle pain and tender points are distressing to patients. It is therefore crucial that all the infor-

mation is considered before general statements that affect patients' management are made.

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Age limits on infertility treatment and adoption

EDITOR,—C J Redgment and colleagues highlight the fact that older women face obstacles if they wish to conceive by gamete intrafallopian transfer or in vitro fertilisation.¹ Other obstacles may also be placed in the way of older women who wish to become mothers. Two recent cases have highlighted the discrimination practised against older women with regard to their wish to conceive or adopt children. In one a woman was apparently denied in vitro fertilisation solely because she was over 35 and this was the cut off age for this procedure in the health authority concerned. In the other case a couple in their 40s, considered to be too old to adopt a child in Britain, attempted to buy a child in Romania and for a time faced a jail sentence.

Barriers seem to be put up against women who wish to start a family later in their lives. It seems strange that this is the case when society is increasingly concerned that children are brought up in a stable environment, which a more mature couple are more likely to provide. Evidence for this can be found in divorce statistics, which show that couples of similar ages who marry later in life have a lower divorce rate than those who marry early and that, when the number of divorces is related to the duration of marriage at divorce, the highest numbers occur at three completed years (for divorces in 1991).² Selecting older couples thus has two advantages from the point of view of stability: if they married later in life they are less likely to divorce and if they married early they have passed the time of highest risk for divorce. Women are also increasingly choosing to devote their energies in their 20s and early 30s to furthering their careers, to the great benefit of society, rather than having children. The proportion of women born in 1960 who reached the age of 30 without having had a child was double that of those born in 1945.³ Some of these women will then have difficulty in conceiving partly because of the reduction in fertility that occurs in later reproductive life.

We think that it is a betrayal of trust if, having reaped the benefits from this generation of women, we as a society then turn round and refuse them the opportunity to raise children on the grounds that they are too old. Such a policy cannot be considered to be equitable and should be opposed. We propose that the maximum age for adoption should be raised for those who wish to adopt children under 5 from the present limit of 35-38 to 45 (women aged 45 would survive an average of about 31 years after adopting a child, while the figure for men is about 26 years (health statistics unit, Office of Population Censuses and Surveys, personal communication)).

Arguments could also be mustered for raising the lower age limit for potential adoptive parents from the current 21 to 26. If this was done many